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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/757,885

01/15/2004

Frank Torsten Seide

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WESTMAN CHAMPLIN (MICROSOFT CORPORATION)

SUITE 1400

900 SECOND AVENUE SOUTH

MINNEAPOLIS, MN 55402-3319

EXAMINER

NEWAY, SAMUEL G

ART UNIT

PAPER NUMBER

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/757,885	<b>Applicant(s)</b> SEIDE ET AL.	
	<b>Examiner</b> Samuel G. Neway	<b>Art Unit</b> 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                                   |                                                                                         |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                              | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/26/07</u> . | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

1. This is responsive to the application filed on 15 January 2004.

#### ***Claim Objections***

2. Claims 3 and 16 are objected to because of the following informalities:

Claim 3 depends on itself, it is believed it should depend on claim 2 and is treated as such.

Claim 16 depends on claim 1, it is believed it should depend on claim 12 and is treated as such.

#### ***Specification***

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 3, the limitation "disconnected phonetic hypotheses" has no proper antecedent basis in the specification.

In claim 4, the limitation "ranking the plurality of phonetic hypotheses identified" has no proper antecedent basis in the specification.

#### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 12 – 16 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

The computer readable medium, in accordance with Applicant's specification, may be an electromagnetic signal (page 5, line 24 to page 6, line 9). This subject matter is not limited to that which falls within a statutory category of invention because it is not limited to a process, a machine, a manufacture, or a composition of matter. Instead, it includes a form of energy, which does not fall within a statutory category.

Amending the claims to recite 'computer storage media' would overcome this rejection in a manner consistent with Applicant's specification.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 16 are rejected under 35 U.S.C. 102(b) as being anticipated by James et al ("A Fast Lattice-Based Approach to Vocabulary Independent Wordspotting", Proc. ICASSP, Adelaide, 1994).

Claim 1:

James discloses a method of searching audio data (Abstract), comprising:  
receiving a query defining multiple phonetic possibilities ("keyword pronunciation", page 1, col. 2, paragraph 4); and

comparing the query with a lattice of phonetic hypotheses associated with the audio data to identify if at least one of the multiple phonetic possibilities is approximated by at least one phonetic hypothesis in the lattice of phonetic hypotheses ("wordspotting stage then becomes a symmetric dynamic programming match of the keyword pronunciation against each lattice", page 1, col. 2, paragraph 4).

Claim 2:

James discloses the method of claim 1 and further comprising: calculating a score indicative of the difference between said at least one of the multiple phonetic possibilities and said at least one hypothesis in the lattice (page 2, col. 1, lines 5-11).

Claim 3:

James discloses the method of claim 2 and further comprising: adding a penalty value to the score if said at least one of the multiple phonetic possibilities is approximated by disconnected phonetic hypotheses (page 1, col. 2, paragraph 4).

Claim 4:

James discloses the method of claim 1 and further comprising: identifying a plurality of phonetic hypotheses in the lattice of phonetic hypotheses that approximate the query (page 2, col. 1, lines 5-11).

Claim 5:

James discloses the method of claim 4 and further comprising: ranking ("best path score") the plurality of phonetic hypotheses identified (page 2, col. 1, lines 47-50).

Claim 6:

James discloses the method of claim 1 and further comprising: identifying a time span associated with said at least one phonetic hypothesis in the lattice of phonetic hypotheses (page 2, col. 1, lines 47-50).

Claim 7:

James discloses the method of claim 1 wherein the query is represented as at least one of a finite-state network, a context-free grammar and a prefix tree (page 2, Table 1, and related text).

Claim 8:

James discloses a method of generating a lattice from audio data (Abstract), comprising:

recognizing phonetic fragments within the audio data, wherein at least some of the phonetic fragments include at least two phones ("using a modified Viterbi HMM-based phone recognizer", page 1, col. 2, paragraph 3); and

calculating a score for paths joining adjacent phonetic fragments (page 2, col. 1, lines 5-11).

Claim 9:

James discloses the method of claim 8 and further comprising: calculating time values and individual acoustic scores for each phone of each of the phonetic fragments (page 2, col. 1, lines 47-50).

Claim 10:

James discloses the method of claim 8 and further comprising: pruning paths that have a score that does not meet a threshold level (page 2, col. 1, lines 19-21).

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Claim 11:

James discloses the method of claim 8 and further comprising: collapsing a plurality of audio frames in the audio data into a single audio frame (page 2, col. 1, lines 34-36).

Claim 12:

James discloses a computer readable-medium encoded with a data structure (page 2, col. 2, lines 26-30), comprising:

a plurality of phoneme hypotheses and an associated score for each hypothesis, wherein at least some of the hypotheses form phonetic fragments that include at least two phones (Figure 1 and related text, page 2, col. 1, lines 5-11); and a plurality of transitions connecting the phoneme hypotheses (page 2, col. 1, lines 5-11).

Claim 13:

James discloses the computer readable-medium of claim 12 wherein the plurality of phoneme hypotheses corresponds to recorded audio data (page 2, col. 1, lines 5-11).

Claim 14:

James discloses the computer readable medium of claim 13 wherein each associated score represents the likelihood of the phoneme hypotheses given the recorded audio data (page 2, col. 1, lines 5-11).

Claim 15:

James discloses the computer readable medium of claim 12 wherein the plurality of transitions include an associated time value (page 2, col. 1, lines 47-50).

Claim 16:

James discloses the computer readable medium of claim 12 wherein the data structure further includes a plurality of fragment transitions connecting one phoneme hypothesis in one phonetic fragment to another phoneme hypothesis in another phonetic fragment (Figure 1 and related text page 2, col. 1, lines 5-11).

### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Dharanipragada et al (USPN 6,073,095) discloses a method for spotting words in speech utilizing a preprocessing step for spotting a word/phone sequence in speech. The preprocessing includes a Viterbi-beam phone level decoding using a tree-based phone language model.

b. Garner et al (USPN 7,212,968) discloses a method for matching sequences of phonemes or the like. The invention can be used to search a database of data files having associated phonetic annotations, in response to a user's input query. The input query may be a voiced or typed query.

c. Kermani (USPN 6,697,796) discloses a method for searching a digital audio database such as a series of voice messages stored in a telephone answering device, compact disk (CD), audio cassette tape, etc.

d. Charlesworth et al (USPN 6,990,448) discloses a method of searching a database, in response to an input query by a user. The method comprises the



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steps of generating phoneme data; searching the database; selecting a portion of the data defining the phoneme and word lattice in the database.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel G. Neway whose telephone number is 571-270-1058. The examiner can normally be reached on Monday - Friday 8:30AM - 5:30PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SN



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